

## ABSTRACT

A system (10) for measuring magnetic fields, wherein the system (10) comprises an unmodulated or direct-feedback flux locked loop (12) connected by first 5 and second unbalanced RF coaxial transmission lines (16a,16b) to a superconducting quantum interface device (14). The FLL (12) operates for the most part in a room-temperature or non-cryogenic environment, while the SQUID (14) operates in a cryogenic environment, with the first and second lines (16a,16b) extending between these two operating environments.

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